

(54) STAINLESS STEEL MATERIALS TO BE WELDED, PROCESSING DEVICE,  
SUPERPURE WATER PRODUCING AND SUPPLYING DEVICE,  
SUPERHIGH PURITY GAS SUPPLY PIPING SYSTEM AND WELDING  
METHOD

OHM  
117B

- (11) 6-182558 (A) (43) 5.7.1994 (19) JP  
(21) Appl. No. 4-303681 (22) 13.11.1992 (33) JP (31) 92p.164375 (32) 29.5.1992(1)  
(71) TADAHIRO OMI(1) (72) TADAHIRO OMI(1)  
(51) Int. Cl.<sup>5</sup>. B23K9/32, B23K9/00, B23K9/028, B23K9/08, B23K9/095, B23K9/23

**PURPOSE:** To provide the welding method capable of preventing generation and resticking of metallic fumes in the vicinity of the weld zone surface and reducing the precipitation quantity of a chromium carbide.

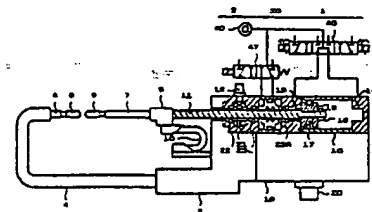
**CONSTITUTION:** In the welding method where respective specified parts (weld zone) of plural stainless materials are melted and solidified and plural stainless steel members are joined together, heat gains to the weld zones are regulated to  $\leq 600$  joule/cm. Further, the welding speed is regulated to  $\geq 20$  cm/min. In addition, in the stainless steel materials, the sum total of the elution quantity of Fe, Ni, Cr and Mn when objects to be welded are cleaned by the superpure water (15L/hr. flow rate, 6 hours) after welding is regulated to  $\leq 0.1 \mu\text{g}$  per weld length 1cm.

(54) SPOT WELDING MACHINE

- (11) 6-182559 (A) (43) 5.7.1994 (19) JP  
(21) Appl. No. 5-134061 (22) 12.5.1993 (33) JP (31) 92p.146523 (32) 12.5.1992(1)  
(71) S G K.K. (72) WATARU ICHIKAWA(2)  
(51) Int. Cl.<sup>5</sup>. B23K11/11, B23K11/24, B23K11/28

**PURPOSE:** To control the opening and closing position between tip electrodes by detecting the moving position of pressurizing cylinder rod to impress the pressurizing force between the tip electrodes and detecting the distance between the electrodes to apply braking force on the rod.

**CONSTITUTION:** The spot welding machine is provided with the pressurizing cylinder 1 to impress the pressurizing force between the electrodes by moving a welding gun arm, a means to detect the distance between the electrodes by detecting the position of the pressurizing cylinder rod 11, a brake means 30 which brakes the movement of the pressurizing cylinder 1, stops the movement of a welding gun and position it on the specified position, a speed control means which controls variably the moving speed of the pressurizing cylinder 1 and relaxes impact at the time of contacting between sheets and the tip electrodes and an electrode state determination means which determines the distance between the tip electrode above a specified value and informs the tip electrode opening and closing operation as mentioned above. Consequently, the opening and closing position between the tip electrodes and the moving speed can be controlled.



2: position detector, 3: arm supporting member, 4: arm.  
5: movable arm, 6, 7: holder, 8, 9: tip electrodes, 19: welding transformer

(54) SPOT WELDING MACHINE

- (11) 6-182560 (A) (43) 5.7.1994 (19) JP  
(21) Appl. No. 5-134062 (22) 12.5.1993 (33) JP (31) 92p.146523 (32) 12.5.1992(1)  
(71) S G K.K. (72) WATARU ICHIKAWA(2)  
(51) Int. Cl.<sup>5</sup>. B23K11/11, B23K11/24, B23K11/28

**PURPOSE:** To control the moving speed and the moving distance of both tip electrodes by braking the movement of first and second arms according to the detected distance between the tip electrodes.

**CONSTITUTION:** The spot welding machine is provided with first and second tip electrodes 8 and 9 which come into contact with sheets to be welded with the specified pressurizing force to pass a welding current, the first and second arms 4 and 5 which transmit the pressurizing force and hold the tip electrodes, a pressurizing means which pressurizes these tip electrodes 8 and 9 and moves the first and second arms 4 and 5, a means to detect the distance between the first and second tip electrodes and a brake means 30 to brake the movement of the first and second arms. Consequently, braking force is applied to the movement of the arms by the brake means 30 according to the detected distance between the tip electrodes and the moving speed and the moving distance of both tip electrodes can be controlled.

